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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,481	01/23/2004	Kazuo Iizuka	02975.000131	4938
5514	7590	06/22/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			KIM, PETER B	
			ART UNIT	PAPER NUMBER
			2851	
DATE MAILED: 06/22/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/762,481

Applicant(s)

IIZUKA ET AL.

Examiner

Peter B. Kim

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12004, 32004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claims 28-31 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 28-31 do not further limit the claims on which they depend. Claims 28-31 are only limited by the structure of the semiconductor device.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28, 29, 30, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ziger et al. (Ziger) (5,976,741).

Ziger discloses semiconductor device comprising columns of the exposure pattern (Fig. 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 10-14, and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziger et al. (Ziger) (5,976,741) in view of Suzuki et al. (Suzuki) (5,412,214).

Ziger discloses a method of exposing a member and a projection exposure apparatus and method which uses a mask (25) including plural columns of a mask for repeated exposure to a member to form plural columns of an exposure pattern (20). Ziger discloses controlling the apparatus to alternately performing the light irradiation and step driving of the the member and moving the mask (col. 1, lines 13-29, col. 2, line 55 – col. 3, line 58). Although Ziger does not expressly disclose an illumination system, an exposure stage, a mask stage and a controller for driving the member by a movement amount equal to n times a pitch of the columns and moving the mask by a movement amount equal to n times a pitch of the columns, such structure are inherent to the invention of Ziger. An illumination is necessary to expose the pattern and stages are necessary to move the member and the mask. Further, col. 2, line 55 – col. 3, line 58 teaches that the invention uses a step-and-repeat process which alternately performs the light irradiation and step driving, and in order to obtain the multiple exposure pattern as taught by Ziger requires the movement of stage as claimed. However, Ziger does not disclose a projection system which projects the light form the mask on to the member. Suzuki discloses a projection exposure apparatus and method (Fig. 1) comprising member (W), exposure stage (20), a mask (R) and a projection system (PL) which projects the light from the mask to the member in a step and repeat process. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a projection system of Suzuki to the invention of Ziger in order to change the magnification and to reduce the size of the pattern on the member.

Claims 6-9, 15-18, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ziger et al. (Ziger) (5,976,741) in view of Suzuki et al. (Suzuki) (5,412,214) and Kondo (6,597,002).

Ziger discloses a method of exposing a member and a projection exposure apparatus and method which uses a mask (25) including plural columns of a mask for repeated exposure to a member to form plural columns of an exposure pattern (20). Ziger discloses controlling the apparatus to alternately performing the light irradiation and step driving of the the member and moving the mask (col. 1, lines 13-29, col. 2, line 55 – col. 3, line 58). Although Ziger does not expressly disclose an illumination system, an exposure stage, a mask stage and a controller for driving the member by a movement amount equal to n times a pitch of the columns and moving the mask by a movement amount equal to n times a pitch of the columns, such structure are inherent to the invention of Ziger. An illumination is necessary to expose the pattern and stages are necessary to move the member and the mask. Further, col. 2, line 55 – col. 3, line 58 teaches that the invention uses a step-and-repeat process which alternately performs the light irradiation and step driving, and in order to obtain the multiple exposure pattern as taught by Ziger requires the movement of stage as claimed. However, Ziger does not disclose a projection system which projects the light form the mask on to the member and a light shielding member. Suzuki discloses a projection exposure apparatus and method (Fig. 1) comprising member (W), exposure stage (20), a mask (R) and a projection system (PL) which projects the light from the mask to the member in a step and repeat process. Kondo discloses a light shielding member (BL) in a exposure apparatus. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a projection system of Suzuki to the invention of Ziger in

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order to change the magnification and to reduce the size of the pattern on the member and to provide a light shielding member of Kondo in order to provide higher exposure accuracy as taught by Kondo in col. 2, lines 49-54.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Peter B. Kim
Primary Examiner
Art Unit 2851

June 18, 2005